

Learning from the Successes and Failures of Charter Schools

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SEPTEMBER 2012

NOTE: This discussion paper is a proposal from the author. As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The authors are invited to express their own ideas in discussion papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This discussion paper is offered in that spirit.

BROOKINGS

Abstract

Our education system is in desperate need of innovation. Despite radical advances in nearly every other sector, public school students continue to attend school in the same buildings and according to the same schedule as students did more than a hundred years ago, and performance is either stagnant or worsening. One of the most important innovations in the past half-century is the emergence of charter schools, which, when first introduced in 1991, came with two distinct promises: to serve as an escape hatch for students in failing schools, and to create and incubate new educational practices. We examine charter schools across the quality spectrum in order to learn which practices separate high-achieving from low-achieving schools. An expansive data collection and analysis project in New York City charter schools yielded an index of five educational practices that explains nearly half of the difference between high- and low-performing schools. We then draw on preliminary evidence from demonstration projects in Houston and Denver and find the effects on student achievement to be strikingly similar to those of many high-performing charter schools and networks. The magnitude of the problems in our education system is enormous, but this preliminary evidence points to a path forward to save the 3 million students in our nation's worst-performing schools, for a price of about \$6 billion, or less than \$2,000 per student.

Table of Contents

ABSTRACT	2
CHAPTER 1: THE NEED FOR INNOVATION	5
CHAPTER 2: CHARTER SCHOOLS AS INCUBATORS OF INNOVATION	7
CHAPTER 3: HARNESSING DIFFERENCES IN CHARTER SCHOOL EFFECTIVENESS	10
CHAPTER 4: THE PROPOSAL	13
CHAPTER 5: SCALING UP AND EXPERIMENTING	16
CHAPTER 6: CONCLUSIONS	17
AUTHOR	18
ENDNOTES	19
REFERENCES	19

Chapter 1: The Need for Innovation

For years, charter schools have brought new ideas to the work of educating our sons and daughters... [They] serve as incubators of innovation in neighborhoods across our country.

President Barack Obama (2012)

What I like most about our best charters is that they think differently.

Secretary Arne Duncan (2009)

In a 2009 speech, Secretary of Education Arne Duncan issued a challenge to turn around America's chronically low-performing schools. There are approximately 5,000 such schools, or about 5 percent of all public elementary and secondary education in the country. According to Duncan, "About half are in big cities, maybe a third are in rural areas, and the rest are in suburbs and medium-sized towns. This is a national problem—urban, rural, and suburban."

The data on our entire education system reinforce and expand on his rhetoric. American public schools are in dire straits, with the nation performing poorly relative to other countries and failing to serve many of its most underprivileged and vulnerable students. Data from the National Assessment of Educational Progress—a set of assessments administered every two years to a nationally representative group of fourth, eighth, and twelfth graders—reveal that 33 percent of eighth graders are proficient in reading and 34 percent are proficient in math; data for fourth and twelfth graders are similar. According to a Center for Education Policy report, 48 percent of American public schools did not make adequate yearly progress for the 2010–11 school year (Usher 2011). In 2010, The Education Trust reported that about one in five high school graduates does not score high enough on the United States Army's Armed Services Vocational Aptitude Battery (ASVAB) to meet the minimum standard necessary to enlist in the Army (Theokas 2010). Americans spend an average of \$10,768 per pupil per year on primary and secondary education, more than any other Organisation for Economic Co-operation and Development (OECD) country except Switzerland, yet

among those same countries, American fifteen-year-olds rank twenty-fifth in math achievement, seventeenth in science, and twelfth in reading (Aud et al. 2011; Fleischman 2010). Our stagnant education system has proven especially detrimental to poor and minority students. Among the eighteen large urban districts that participated in the Trial Urban District Assessment of the National Assessment of Educational Progress, there is not one in which even 25 percent of black students are proficient in either reading or math (Fryer 2012).

And yet it was not always so. The United States was once a world leader in education. In 1962, the UNESCO Institute for Education found that American thirteen-year-olds showed the highest achievement in science (Foshay et al. 1962). In 1970, the United States had 30 percent of the world's college graduates, and as recently as 1995, the United States was tied for first in college and university graduation rates (McKinsey 2009).

These facts have led to a growing demand for change in the way we approach education, but no consensus on the way forward. Some argue that teachers and school administrators are dealing with issues that originate outside the classroom, citing research that shows racial and socioeconomic achievement gaps are present before children enter school (Fryer and Levitt 2004, 2006) and that one-third to one-half of the gap can be explained by family-environment indicators (Fryer and Levitt 2004; Phillips et al. 1998). In this scenario, combating poverty and having more-constructive out-of-school time will increase the efficacy of traditional school practices. Indeed, Coleman and colleagues (1966), in their famous report on equality of educational opportunity, argue that schools alone cannot treat the problem of chronic underachievement in schools. Others argue for a more school-centered approach, referring to anecdotes of excellence in particular schools or examples of other countries where low-income children in superior schools outperform average-income Americans (Chenoweth 2007). In this scenario, the policy priority is to understand the set of practices driving these success stories so we can use them to turn around failing schools. Finally, some believe that any top-down approach is futile, arguing that increasing market forces through choice, vouchers, parental triggers, and reduced barriers to entry and exit will allow the cream to rise to the top and force underperforming schools out of the education market.

Clearly, there is a desperate need for innovation in education. Every day, the youth of America arrive at buildings that sport long hallways lined with identical square rooms. These students move from room to room every hour accompanied by peers of similar ability levels. They sit and listen as teachers lecture from the front of the room. This has been the American public school experience for more than a hundred years. While other industries were inventing and refining penicillin, the polio vaccine, commercial air travel, cell phones, laptop computers, and iPads, public schools repainted their hallways, repaired their egg-carton buildings, and hired more teachers to deliver the same lecture-driven instruction.

Introduced a scant twenty-one years ago, charter schools were meant to counteract this complacency; they have since become one of the most important innovations in American public education in the past half century. Even in these divisive political times, leaders from both sides of the aisle have expressed support for expanding charter access and raising charter school caps.¹ Although they are required to have open admissions policies, charter schools are exempt from most other statutory requirements of traditional public schools, including mandates around spending, human capital management, parental involvement in the educational process, curriculum and instructional practices, and even governance and management structures.² In exchange for these freedoms, the public can hold charters accountable for student outcomes in ways that we cannot hold traditional public schools.

While charter schools have tremendous promise to level the educational playing field in the United States, two major barriers have heretofore prevented these schools from

reaching their full potential. First, as a whole, charter schools have yielded inconsistent results. Some have made impressive strides in closing the achievement gap between low-income and higher-income students, but others have not had any significant effects. Second, at the current rate of growth, it will take about a hundred years for charter schools to expand to serve all children, and so if they are to be a true engine for reform, we must expand charter schools' successes to the traditional public schools that serve most American students.

On this first front, to better understand what features of charter schools are most effective in raising scholastic achievement, we examined evidence from New York City charter schools, where we identified five educational practices that are proving most successful: (1) focusing on human capital, (2) using student data to drive instruction, (3) providing high-dosage tutoring, (4) extending time on task, and (5) establishing a culture of high expectations.

While the second problem has received much less attention, our experiments in Houston and Denver—where we implement these charter-school practices in traditional public schools—point to a way forward. Although these experiments are ongoing, preliminary results suggest that those reforms that were shown to boost achievement in charter schools can be successfully implemented in traditional public schools as well. In all sections of this paper, we draw on scholarly work from Dobbie and Fryer (2011b) and Fryer (2012), which provides the main analysis and much further detail. Further research is needed to fully flesh out how these charter-school interventions translate to public schools, but these results illuminate a promising path forward for K–12 education reform.

Chapter 2: Charter Schools as Incubators of Innovation

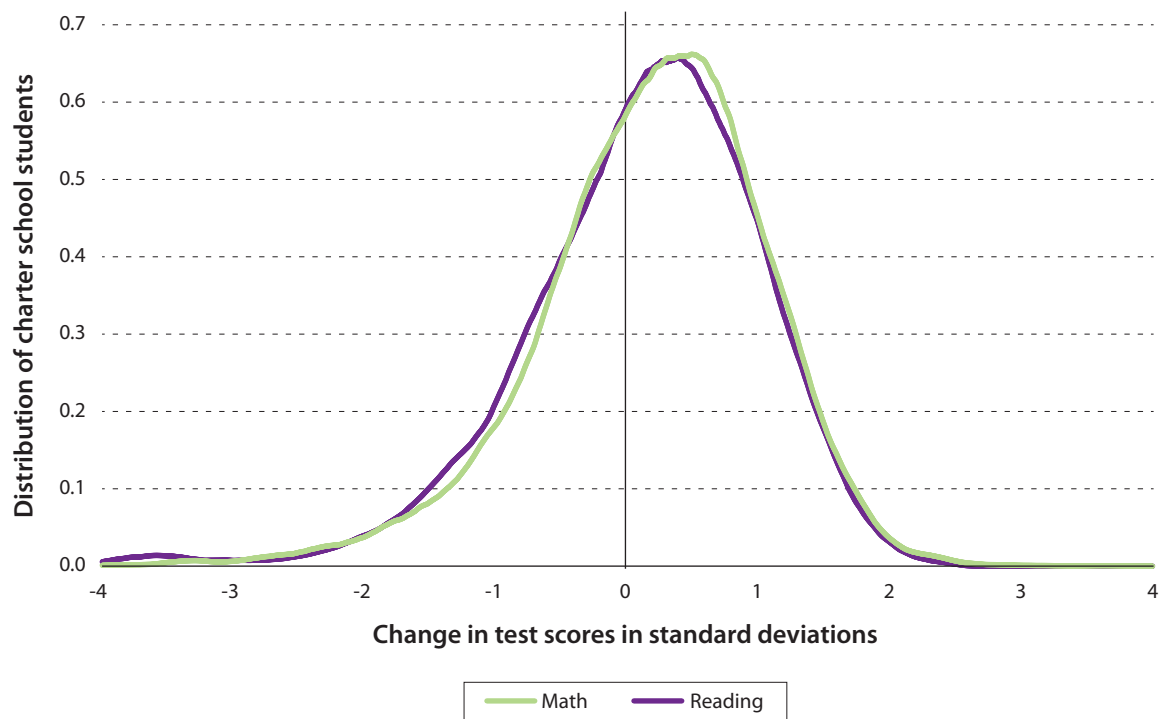
Publicly funded but privately run, charter schools come in many shapes and sizes. In fact, they are nothing if not diverse, with some in the inner city and others in rural areas, some that are members of larger networks and others that are stand-alone institutions. There is no single type of charter school: their operating procedures differ from one another as well as from traditional public schools.

When originally conceived, charter schools offered two distinct promises: First, they were to serve as an escape hatch for students in failing schools. Second, they were to use their legal and financial freedoms to create and incubate new educational practices. The evidence on how these promises have been kept is mixed: some charters have availed themselves of this freedom and shown marked success, but others have had disastrous results. It is this disparity of outcomes that provides

an exceedingly rare laboratory in which to understand how schools determine student outcomes based on the policies they adopt and the choices they make.

Charter schools currently enroll almost 4 percent of all students, a number as substantial as it is in large part because of their willingness to try new approaches. Some of them have shown remarkable success in boosting test scores, offering their students the promise of closing the racial achievement gap in just a few years. For example, schools such as the Success Academy Charter Schools in New York City, YES Prep in Houston, and charter schools in the Harlem Children’s Zone have become beacons of hope, demonstrating the enormous potential to improve student achievement. Others, however, have failed to increase achievement and have actually performed worse than their traditional counterparts.

FIGURE 1.
Math and Reading Gains in New York City Charter Schools (Student Level), 2010–11



Source: Data from the author.

In fact, a recent study by Mathematica Policy Research (2011) shows that, on average, charters have no statistical impact on test scores relative to traditional public schools. Because charter schools have such a mixed record, they are clearly not a panacea. But the astounding success that some have experienced suggests that we should learn as much as possible from them in the hopes of better serving students enrolled in traditional public schools.

Figure 1 shows charter school student gains in math and reading in 2010–11 (see Box 1 for discussion of standard deviations). On the right tail of the distribution are students from several charter schools and charter management

Bronx Charter School for the Arts believes that participation in the arts is a catalyst for academic and social success, and therefore integrates art into almost every aspect of the school experience and prompts students to use art as a language to express their thoughts and ideas. On the other end of the spectrum, YES Prep students in Houston log hundreds of volunteer hours through “service learning opportunities” that are integrated into the curriculum. There are also a number of so-called “No Excuses” schools—such as KIPP Infinity, the Harlem Children’s Zone Promise Academies, and the Democracy Prep Public Schools—that emphasize frequent student assessments, dramatically increased instructional time, parental pledges of involvement, aggressive human capital practices, a “broken-window” theory of discipline (where schools address even smaller behavioral infractions with the intent of preventing larger ones), and a relentless focus on math and reading achievement (Carter 2000, Thernstrom and Thernstrom 2004, Whitman 2008).

High-performing charter schools like these have used their relative freedom to show what is possible when it comes to educating our most disadvantaged and vulnerable students.

There are several other examples of charters on the cutting edge of education reform, developing and implementing bold practices and procedures. Uncommon Schools, established in five cities in three states, believes that arming teachers with specific techniques around classroom management and academic engagement, along with imbuing schools with a culture of practicing those techniques, is the best model of teacher professional development. Blackstone Valley Prep Mayoral Academy in Rhode Island collects

organizations that have demonstrated marked success (Abdulkadiroglu et al. 2011; Angrist et al. 2010; Dobbie and Fryer 2011a; Gleason et al. 2010; Hoxby and Murarka 2009). At the Promise Academy middle school in the Harlem Children’s Zone, students gain an average of 0.229 standard deviations in math and 0.047 standard deviations in reading per year (Dobbie and Fryer 2011a). The average KIPP (Knowledge Is Power Program) middle school produces student gains of 0.26 standard deviations in math per year and 0.09 standard deviations in reading per year. Recent evaluations of SEED (Curto and Fryer 2012) and Democracy Prep Public Schools (Dobbie 2012) show similar gains in math and even higher gains in reading: 0.229 standard deviations in math and 0.211 standard deviations in reading per year; and 0.238 standard deviations in math and 0.232 standard deviations in reading per year, respectively.

These and other charter schools have used their freedom to develop an array of innovative practices. For instance, the

daily student performance data to reduce the time between student deficiency diagnosis and treatment. Excel Academy in Boston uses independent, project-based learning to build nonacademic skills such as persistence. Match Schools in Boston, after developing an innovative and widely imitated tutoring model, are now building an alternative education school to select and develop teachers. Success Academy Charter Schools in New York City develop teachers by drilling content knowledge, particularly in reading. Rocketship Education schools in Northern California have produced large student proficiency gains, thanks to a blended learning model that stresses differentiation and dynamic movement through work stations.

High-performing charter schools like these have used their relative freedom to show what is possible when it comes to educating our most disadvantaged and vulnerable students. But given that the aggregate impact of charter schools is statistically zero compared to traditional public schools

BOX 1.

What Is a Standard Deviation?

Improvements in student test scores are often described using the yardstick of “standard deviations.” This allows for comparisons across different types of tests, which may have different formats and scales, because improvements expressed as standard deviations represent the same increase in student achievement percentiles no matter the test.

To get a sense of how standard deviations work, it is useful to consider the normal distribution (bell curve). If you are on the curve at the very middle, the 50th percentile, moving 0.5 standard deviations to the right puts you at the 69th percentile, a big jump, while moving 1 standard deviation puts you at the 84th percentile, an enormous jump. A useful rule of thumb is that there are roughly 34 percentiles to a standard deviation (or, equivalently, 0.03 standard deviations to a percentile).

Education researchers often calculate the impact of an education policy in terms of standard deviations of test scores. Suppose a certain intervention is estimated to improve test scores by 0.25 standard deviations. Scores for a student originally at the 50th percentile will improve by about 10 percentiles. Thus, standard deviations are a useful tool for understanding the effects of different policies.

Finally, two benchmarks are particularly useful when discussing standard deviations in education policy: First, on entering kindergarten the black–white achievement gap is 0.64 standard deviations in math and 0.40 standard deviations in reading. Second, we can think of an improvement of 0.08 standard deviations as one extra month of schooling.

(Mathematica 2011, 2012), many mediocre- to low-performing charter schools have shown exactly what *not* to do for those similar students. For every Promise Academy or Democracy Prep that is changing lives for the better by putting students on the path to college and beyond, there is a charter school changing lives for the worse.

Despite the large number of failing charter schools, there is reason for optimism, because the wide range of quality among

charter school provides us with an unexpected advantage: by gathering measures of school practices (inputs) and using estimates of each school’s impact on student achievement, this variability provides an ideal opportunity to understand which inputs best explain school effectiveness. In other words, while charter schools in general have shown an uncertain ability to improve student achievement, they have provided a ripe opportunity to study their innovations in order to figure out what does and does not work.

Chapter 3: Harnessing Differences in Charter School Effectiveness

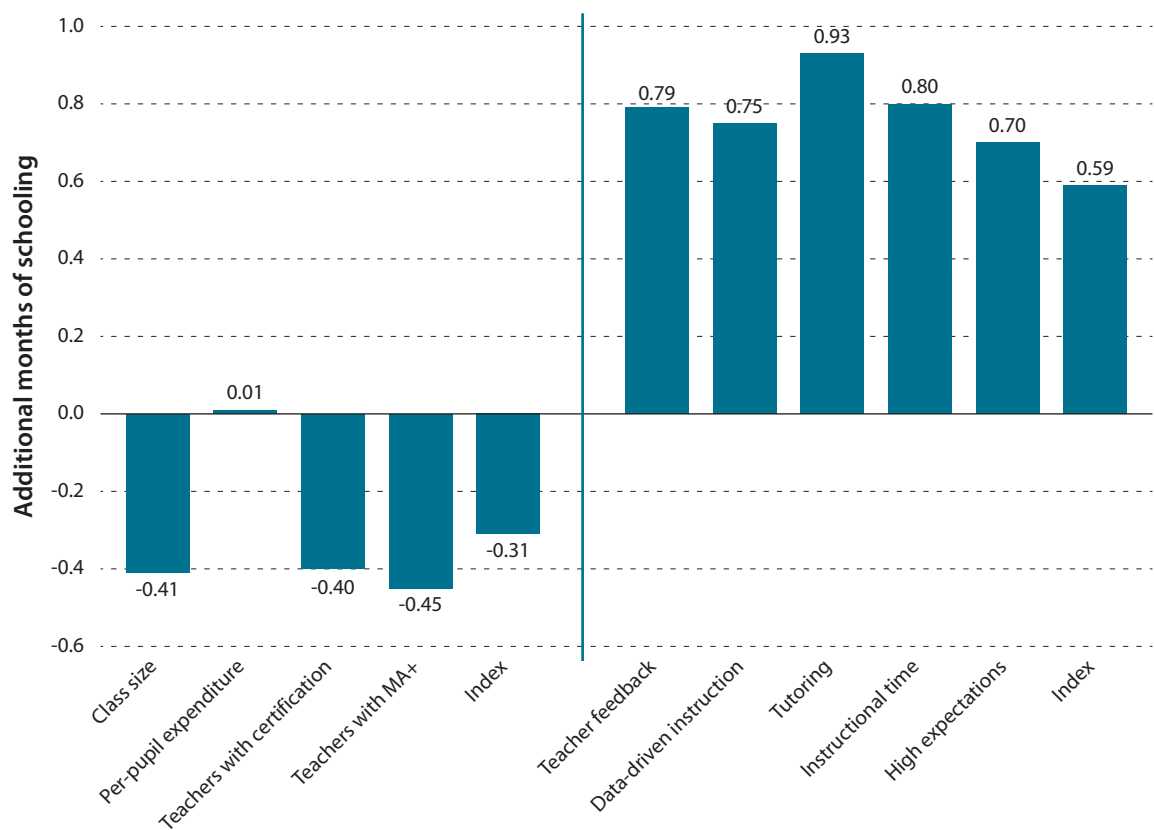
LESSONS FROM CHARTER SCHOOLS

In order to use differences among charter schools to better understand which practices drive student achievement, we collected survey, lottery, and video data for thirty-five charter schools in New York City with students in grades 3–8 in the spring of 2010 (Dobbie and Fryer 2011b). We amassed a database and looked at how various inputs and school policies separated the more-effective from the less-effective schools. Our analysis demonstrates that input measures associated with a traditional resource-based model of education—class size, per-pupil expenditure, the fraction of teachers with

teaching certification, and the fraction of teachers with an advanced degree—were *not* related to school effectiveness in our sample.

In fact, schools with more certified teachers have annual math gains that are 0.043 standard deviations lower than other schools. Schools with more teachers with a master’s degree have annual English language arts (ELA) gains that are 0.034 standard deviations lower. Schools with smaller class size, higher per-pupil expenditure, more teachers with teaching certification, and more teachers with an advanced degree actually tended to have lower student achievement.³

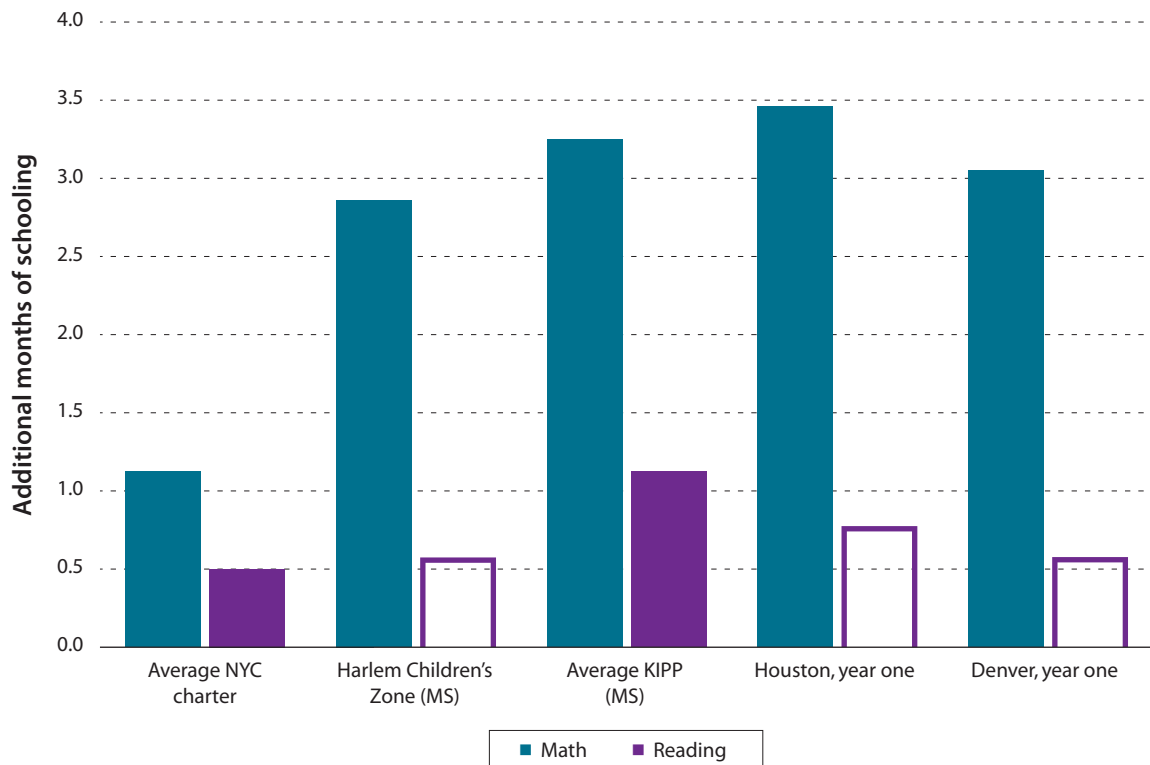
FIGURE 2.
School Inputs and Practices, and School Effectiveness



Source: Data from the author.
Note: One month of schooling is equal to roughly 0.08 standard deviations. Correlations are computed using the weighted mean of math and reading.

FIGURE 3.

Effects on Student Test Scores



Source: Dobbie and Fryer (2011a); Hoxby and Murarka (2009); Mathematica (2010); author's data.

Note: Solid bars indicate significance at the 5 percent level. One month of schooling is equal to roughly 0.08 standard deviations. MS refers to middle schools.

In stark contrast, five practices—more human capital or teacher feedback, data-driven instruction, high-dosage tutoring, increased time on task, and a relentless focus on high academic expectations—were consistently found in higher-achieving schools.⁴ Together, these five practices explain roughly half the difference in effectiveness between charter schools.

Controlling for the other four practices, schools that give formal or informal feedback (more human capital) ten or more times per semester have annual math gains that are equal to 0.6 more months of school and annual ELA gains that are equal to 0.55 more months than other schools. Schools that tutor students at least four days a week in groups of six or fewer have annual ELA gains that are equal to 0.5 more months than other schools. Schools that add 25 percent or more instructional time to the average New York City traditional public school's time have annual math gains that are equal to 0.625 more months than other schools. Schools that prioritize high academic and behavioral expectations for all students have annual math gains that are equal to 0.55 more months

and ELA gains that are equal to 0.375 more months than those schools that do not prioritize those expectations.⁵

Figure 2 shows the average correlation between inputs and reading and math effectiveness, measured in additional months of schooling.

Armed with these correlates of charter school effectiveness, we cannot simply wait for the expansion of successful charter schools. At their current rate of growth, it will take more than a hundred years for high-performing charter schools to educate every student in the country. For these benefits to reach the students who need them most, the United States will need to take the innovations from charter schools that have proven effective and apply them to the traditional public schools that serve most students.

APPLYING THE LESSONS OF CHARTER SCHOOLS IN PUBLIC SCHOOLS

Recent promising—but preliminary—evidence from demonstration projects in Houston and Denver suggests that these practices can be transferred from charters to public schools

(see box “Houston Case Study” for details). In the 2010–11 school year, nine of the worst-performing schools in the Houston Independent School District participated in an experiment testing these very elements with the cooperation of the district. Starting in the 2011–12 school year, Denver Public Schools began a similar initiative in ten schools. While the data from the most recent school years are still coming in, the results thus far suggest student test scores improved dramatically. In fact, the magnitude of this increase was strikingly similar to that seen among the best charters.

Figure 3 places student results from Houston and Denver in the context of high-achieving charter schools. Each bar represents the effect of these schools on students’ math and reading test scores. The results seen in Houston and Denver are comparable to those of successful charter schools. For the Houston schools, these effects are enough to close the math achievement gap between the schools in the experiment—some of the worst-performing schools in Houston—and the average Houston public school in less than two years.

These test score gains are remarkable, but only insofar as they are predictive of later life outcomes. If charter schools produce high test scores but also increase the number of students who become teen mothers or who end up incarcerated, we cannot consider them successful. New evidence from a survey of Harlem Children’s Zone lottery applicants demonstrates that students who won the lottery were half as likely to have been pregnant and one-quarter as likely to have been incarcerated by the time they were surveyed at around age eighteen. Furthermore, lottery winners are 86 percent more likely to have taken the SAT and 32 percent more likely to have been accepted to college. These figures suggest that the improvement in student test scores produced by high-performing charter schools has a meaningful impact on later life outcomes as well.

By disentangling which factors make charters successful and demonstrating that these factors are able to take root in traditional public schools, we have illuminated a path forward. Expanding this approach to similar schools across the country while experimenting with combinations of reforms can help us better understand what works for different schools.

Chapter 4: The Proposal

The evidence from Houston and Denver is preliminary but it holds tremendous promise that the best practices of successful charter schools can play a strong role in improving low-performing, traditional public schools. While there is still work to be done to optimize and customize solutions for individual districts and schools, early evidence shows that this proposal could have a dramatic impact on the 3 million students in the nation's worst-performing schools, at a marginal cost of less than \$2,000 per student.

It is important to emphasize that our proposal is *not* to replace traditional public schools with charter schools. Quite the opposite: our goal is to emulate in both charter *and* traditional public schools practices that have been shown to be successful. The potential payoff from these changes would be to strengthen the education system and improve the lives of millions of poor and minority students.

The following descriptions of the five broad tenets of our proposal provide a starting point for answering Secretary Duncan's challenge to turn around our nation's chronically underperforming schools:

1. Focus on human capital.

Effective teachers and quality principals are the bedrock of public schools: teachers should be given the tools they need to succeed, including increased feedback from administrators, particularly feedback based on class observations. New teachers, especially, benefit from professional development, and should be trained on a variety of common problems, such as classroom management and instructional rigor. Schools should be encouraged to conduct weekly professional development sessions for all teachers, regardless of experience, with the goal of increasing the rigor of classroom instruction through methods such as lesson planning. Finally, it is essential to install an administration receptive to change and the measures required to improve student achievement.

2. Use student data to drive instruction.

Data can drive more-personalized and more-efficient learning, allowing both teachers and students to track progress and to make sure that each individual student is on an appropriate path. Assessments can be used to adjust everything from tutoring to student goals. To achieve this, schools should

conduct regular assessments of students every four to six weeks. More in-depth assessments could be given several times a year, and teachers could meet with students individually to discuss and set goals after each assessment.

Administrators will need to equip schools with the necessary technology, such as scanners and software, to quickly and easily input student test data into a central database. This database should be available to teachers and administrators, and provide information on student achievement along a variety of vectors.

3. Provide high-dosage tutoring.

Also in the vein of personalized learning, schools can further boost student learning by creating an intensive tutoring program to target curricula to the level of each student. All students should take an assessment at the beginning of the year so that they can be matched with the tutor and peers most conducive to their learning. The tutoring curriculum should be broken up into units. For example, fifteen-day units could devote the first twelve days to instruction, the thirteenth day to assessment, and the last two days to review and remediation based on the assessment.

Tutors should have a bachelor's degree, at the minimum, and be willing to make a full-time commitment. Applicants should take assessments in their subjects of expertise and participate in mock tutorial sessions; administrators would evaluate them and select the best tutors.

While only some grade levels may receive the intensive tutoring, all students in the selected grades should receive tutoring, regardless of ability. Such a policy not only allows all students to benefit, but also helps remove the potentially negative stigma attached to tutoring.

4. Extend time on task.

To make time for increased tutoring, among other changes, the amount of time devoted to instruction should be increased. Schools should implement increased time on task by increasing the length of the school day and by increasing the number of days in the school year. They should tailor the increase in instructional time to students' needs. For example, students struggling more in math should have additional

BOX 2.

Houston Case Study

The experiment in Houston provides one example of how schools can implement these principles in practice.

In the 2010–11 and 2011–12 school years, the five practices of effective charter schools described above—focus on human capital, use student data to drive instruction, provide high-dosage tutoring, extend time on task, and establish a culture of high expectations—were implemented in schools in Houston. In 2010–11, the Houston study included nine middle and high schools; in 2011–12, the study added eleven elementary schools, for a total of twenty Houston Independent School District schools.

DISTRICT INFORMATION AND SCHOOLS

Houston Independent School District is the seventh-largest school district in the nation, with more than 203,000 students and 279 schools. Of these students, 88 percent are black or Hispanic, roughly 80 percent are eligible for free or reduced price lunch, and roughly 30 percent have limited English proficiency.

Like the vast majority of school districts, Houston is governed by elected school boards with the authority to establish districtwide budgets and monitor the district's finances, adopt personnel policies (including decisions relating to the termination of employment), enter into contracts, and establish the district's long-term educational plan and districtwide policies and annual goals to accomplish that long-term educational plan, among many other powers and responsibilities.

In 2010, four Houston high schools were declared Texas Title I Priority Schools, the state-specific categorization for its “persistently lowest-achieving” schools, which meant that these schools were eligible for federal school improvement grant funding. In addition, five middle schools were labeled “academically unacceptable” under the Texas Accountability Ratings. Unacceptable schools were schools that had proficiency levels below 70 percent in reading or ELA, 70 percent in social studies, 70 percent in writing, 55 percent in mathematics, and 50 percent in science; that had less than a 75 percent completion rate; or that had a dropout rate above 2 percent. Relative to average performance in Houston, students in these schools pretreatment scored 0.408 standard deviations lower in math, scored 0.390 standard deviations lower in reading, and were 22 percent less likely to graduate.

As a part of its Academic Excellence Indicator System, the Texas Education Agency selects a forty-school comparison group for every public school in Texas. The groups are designed to facilitate comparisons between schools with similar student bodies on a diverse set of outcomes, including standardized testing participation and results, schoolwide attendance rates, four-year completion rates, dropout rates, a measure of progress made by English language learners, and several indicators of college readiness.

Fusing the recipe of the five practices with the political realities of the Houston Independent School District and its school board and other local considerations, we developed the following five-pronged intervention designed to inject best practices from successful charter schools into failing public schools. The critical steps in implementation were not merely to introduce the five practices and expect success, but also to execute the five practices with the highest quality and with a relentless focus on student achievement.

1. Focus on human capital. As a part of the “turnaround” designation of the school improvement grants offered by the U.S. Department of Education, schools agreed to replace at least 50 percent of teachers as well as any principal who had been on the job more than two years. Following these guidelines, the nine schools in the Houston pilot replaced 53 percent of teachers and all the principals. A significant fraction of the teachers left voluntarily due to the requirement of working an extra hour (although they were compensated for that time), some left because of the uncertainty around a new principal and new expectations, and others were asked to leave (subject to union regulations) due to previously documented poor performance.

Principals taught weeklong training sessions prior to the start of the school year. During the fall, all teachers attended Saturday training sessions focused on increasing the rigor of classroom instruction. In the winter, training continued for new teachers, focusing on common problems and on creating a “toolbox” for teachers both to use certain classroom-management techniques and to increase student engagement.

2. Use student data to drive instruction. Schools individually set goals for data-driven instruction, but each school assessed students at least every six weeks, and teachers and administrators had access to results. Halfway through the school year, each school

gave benchmark assessments based on the Texas state standardized test, and teachers met one on one with students to set goals for the official end-of-year assessment.

3. Provide high-dosage tutoring. Students in select grades received intensive, hour-long, two-on-one tutoring in math. Tutors were given two weeks of training prior to the start of school. The position was full-time with an annual salary of \$20,000; bonus payments up to \$8,000 were offered based on student achievement. Each school hired a site coordinator to oversee tutoring.

4. Extend time on task. The school district received a waiver from the Texas state legislature to extend the school year by five days, and to increase the school day by an hour per day on average. Total instruction time increased by 21 percent relative to the previous year.

5. Establish a culture of high expectations. Each school set its own requirements, and professional development incorporated these goals. The basic requirements were as follows: every classroom must have goals posted, every student must know what her individual goals are for the year and how she is going to achieve these goals, and every school must have visual evidence of a college-going culture.

class periods devoted to math, while those struggling more in reading should spend more time on reading.

5. Establish a culture of high expectations.

From the time that students enter a school, they should understand that everyone expects them to succeed and that the teachers, administrators, and other staff are there to help them succeed. The first week of school should be a “culture camp,” a

time to focus on what behaviors and actions are conducive to achieving success. Classrooms should post goals on the walls as a constant reminder of the high expectations, and schools should visibly promote a culture of going to college by hanging posters about college and by discussing college readiness with students. Students must be cognizant of their individual goals and the steps needed to achieve them.

Chapter 5: Scaling Up and Experimenting

Each school district faces unique challenges and may require slightly different iterations of the five tenets to best suit its needs. The lessons learned from New York City charter schools and from the experiments in Houston and Denver can provide the foundation for reforms and evaluations in other similar districts and schools. In particular, we suggest striving to save students from the lowest-performing 5,000 schools over the next eight years, ultimately reaching 3 million students.

The results from Houston and Denver are promising but also preliminary. It is essential to continue to evaluate and experiment with combinations of reforms. Each school can benefit from reforms and shed light on the questions that remain. And while costs may vary by school, one thing is clear: high expectations are free.

Although it is not possible to offer a one-size-fits-all package of reforms, we cannot allow the perfect to be the enemy of the good. By expanding what we know works and conducting more research as we expand those practices, this new approach could benefit millions of students from the nation’s struggling schools and neighborhoods.

In Houston and in Denver, the marginal cost of the program was approximately \$1,800 per pupil. The components varied widely in cost; for example, high expectations was the lowest-cost reform, involving essentially zero-dollar investments in posters

TABLE 1.
Per Pupil Marginal Costs of Houston Reforms

Tutoring	\$700
Human Capital	\$250
Technology and Data	\$200
Extended Day	\$550
Administrative Costs	\$100

Note: The cost of tutoring was \$2,200 per student tutored. Costs in table are divided across all students, including those who did not receive tutoring, to correspond to impacts, which are also averaged across grades.

and a concerted effort by staff in lieu of additional monetary costs. On the other hand, tutoring required hiring many new full-time staff, and was only provided in sixth- and ninth-grade math due to funding constraints. Table 1 gives an approximate breakdown of the per-pupil marginal costs in Houston.

Further research is necessary to determine where money should be directed to provide the largest returns and to explore to what extent the five reforms can be separated and how they reinforce each other. To reach 3 million children would cost roughly \$6 billion per year.

Chapter 6: Conclusions

Notwithstanding the difficulties and uncertainties surrounding charter schools, two things are certain: First, *some* charter schools drastically improve student achievement. Second, the practices that distinguish these high-performing charters from their low-performing counterparts can be identified and subsequently implemented in traditional public schools. While some of the factors require more restructuring than others, all of them hold the potential to help turn around America's flagging education system.

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Fryer served as chief equality officer at the New York City Department of Education from 2007 to 2008. He developed and implemented several innovative ideas on student motivation and teacher pay-for-performance concepts. He won a Titanium Lion at the Cannes Lions International Advertising Festival for the Million Motivation Campaign.

Fryer has published papers on the racial achievement gap, causes and consequences of distinctively black names, affirmative action, the impact of the crack cocaine epidemic, historically black colleges and universities, and acting white.

Fryer is a 2009 recipient of a Presidential Early Career Award for Scientists and Engineers. He appears on the “2009 Time 100,” *Time Magazine*’s annual list of the world’s most influential people. In 2011, he was awarded a MacArthur “Genius Grant” from the John D. and Catherine T. MacArthur Foundation. In 2012, he was awarded the Calvo-Armengol Prize, which is one of the most prestigious prizes recognizing young economists and social scientists.

Endnotes

1. For a recent example of a “rare display of bipartisanship,” see Dillon (2011).
2. In cases of oversubscription, most states require charter schools to determine enrollment through a lottery.
3. An index of these factors explains about 15 percent of the variance in charter school effectiveness in the negative direction.
4. A 1.0 standard deviation increase in the index is associated with a 0.053 standard deviation increase in annual math gains (equivalent to approximately 0.663 additional months of school) and a 0.039 standard deviation increase in annual ELA gains (0.488 additional months of school). Moreover, four out of the five school practices in this index make a statistically significant contribution controlling for an index of the other four, suggesting that each practice independently conveys some relevant information.
5. From Dobbie and Fryer (2011b, p. 9). We code a school as having high academic and behavioral expectations if an administrator ranks “a relentless focus on academic goals and having students meet them” and “very high expectations for student behavior and discipline” as her top two priorities (in either order).

References

- Abdulkadiroglu, Atila, Joshua D. Angrist, Susan M. Dynarski, Thomas J. Kane, and Parag Pathak. 2011. “Accountability and Flexibility in Public Schools: Evidence from Boston’s Charters and Pilots.” *Quarterly Journal of Economics* 126(2): 699-748.
- Angrist, Joshua D., Parag A. Pathak, and Christopher R. Walters. 2011 (August). “Explaining Charter School Effectiveness.” NBER Working Paper 17332, National Bureau of Economic Research, Cambridge, MA.
- Aud, Susan, et al. 2011. “The Condition of Education (NCES 2011-033).” U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Carter, Samuel Casey. 2000. *No Excuses: Lessons from the 21 High-Performing, High-Poverty Schools*. Washington, DC: The Heritage Foundation.
- Chenoweth, Karin. 2007. “It’s Being Done”: Academic Success in Unexpected Schools. Cambridge, MA: Harvard Educational Publishing Group.
- Coleman et al. (1966)
- Curto, Vilsa E., and Roland G. Fryer, Jr. 2011 (January). “Estimating the Returns to Urban Boarding Schools: Evidence from SEED.” NBER Working Paper 16746, National Bureau of Economic Research, Cambridge, MA.
- Dillon, Sam. 2011, September 13. “With Bipartisan Support, Law on Expansion of Charter Schools Passes the House.” *New York Times*. Available at <http://www.nytimes.com/2011/09/14/education/14educ.html>.
- Dobbie, Will. 2012. “An Analysis of Democracy Prep Public Schools.” Unpublished Working Paper.
- Dobbie, Will, and Roland G. Fryer. 2011a. “Are High-Quality Schools Enough to Increase Achievement among the Poor? Evidence from the Harlem’s Children Zone.” *American Economic Journal: Applied Economics* 3 (3): 158-187.

- Dobbie, Will, and Roland G. Fryer. 2011b (December). "Getting Beneath the Veil of Effective Schools: Evidence from New York City." NBER Working Paper 17632, National Bureau of Economic Research, Cambridge, MA.
- Duncan, Arne. 2009. "Turning Around the Bottom Five Percent: Secretary Arne Duncan's Remarks at the National Alliance for Public Charter Schools Conference." Retrieved from <http://www2.ed.gov/news/speeches/2009/06/06222009.html>.
- Fleischman, Howard L., Paul J. Hopstock, Marisa P. Pelczar, and Brooke E. Shelley. 2010. "Highlights From PISA 2009: Performance of U.S. 15-Year-Old Students in Reading, Mathematics, and Science Literacy in the International Context (NCES 2011-004)." U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Foshay, Arthur W., Robert L. Thorndike, Fernand Hotyat, Douglas A. Pidgeon, and David A. Walker. 1962. "Educational Achievements of Thirteen Year Olds in Twelve Countries." UNESTCO. Available at <http://unesdoc.unesco.org/images/0013/001314/131437eo.pdf>.
- Fryer, Roland. 2012. "Injecting Successful Charter School Strategies into Traditional Public Schools: Early Results from an Experiment in Houston." NBER Working Paper 17494, National Bureau of Economic Research, Cambridge, MA.
- Fryer, Roland, and Steven Levitt. 2004. "Understanding the Black-White Test Score Gap in the First Two Years of School." *The Review of Economics and Statistics* 86 (2): 447–64.
- Fryer, Roland, and Steven Levitt. 2006. "The Black-White Test Score Gap Through Third Grade." *American Law and Economics Review* 8 (2): 249–281.
- Gleason, Philip, Melissa Clark, Christina Clark Tuttle, Emily Dwoyer, and Marsha Silverberg. (2010). "The Evaluation of Charter School Impacts (NCES 2010-4029)." U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Hoxby, Caroline M. and Sonali Murarka. 2009 (April). "Charter Schools in New York City: Who Enrolls and How They Affect Their Students' Achievement." NBER Working Paper 14852, National Bureau of Economic Research, Cambridge, MA.
- Mathematica Policy Research. 2010. "Student Characteristics and Achievement in 22 KIPP Middle Schools." Accessed at http://www.mathematica-mpr.com/publications/PDFs/education/KIPP_fnlrpt.pdf.
- Mathematica Policy Research. 2011 (December). "Do Charter Schools Improve Student Achievement? Evidence from a National Randomized Study." Working Paper. Accessed at http://www.mathematica-mpr.com/publications/PDFs/education/charterschools_WP.pdf.
- Mathematica Policy Research. 2012. "Charter-School Management Organizations: Diverse Strategies and Diverse Student Impacts." The National Study of Charter Management Organization (CMO) Effectiveness. Accessed at http://www.mathematica-mpr.com/publications/pdfs/education/cmo_final_updated.pdf.
- McKinsey & Company. 2009. "Detailed findings on the economic impact of the achievement gap in America's schools." Accessed at http://www.mckinseyonsociety.com/downloads/reports/Education/detailed_achievement_gap_findings.pdf.
- Obama, Barack. 2012. "Presidential Proclamation—National Charter Schools Week." Accessed at <http://www.whitehouse.gov/the-press-office/2012/05/07/presidential-proclamation-national-charter-schools-week-2012>.
- Phillips, Meredith, James Crouse, and John Ralph. 1998. "Does the Black-White Test Score Gap Widen After Children Enter School?" in *The Black-White Test Score Gap*, eds. Christopher Jencks and Meredith Phillips. Washington, DC: The Brookings Institution Press, 229–272.
- Theokas, Christina. 2010, December. "Shut Out of the Military: Today's High School Education Doesn't Mean You're Ready for Today's Army." Available at http://www.edtrust.org/sites/edtrust.org/files/publications/files/ASVAB_4.pdf.
- Thernstrom, Abigail, and Stefan Thernstrom. 2004. *No Excuses: Closing the Racial Gap in Learning*. New York, NY: Simon and Schuster.
- Usher, Alexandra. 2011. "AYP Results for 2010-11." Center on Education Policy. Accessed at <http://www.cep-dc.org/displayDocument.cfm?DocumentID=386>.
- Whitman, David. 2008. *Sweating the Small Stuff: Inner-City Schools and the New Paternalism*. Dayton, OH: Thomas B. Fordham Institute.



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Highlights

Roland G. Fryer, Jr. of Harvard University and EdLabs provides guidance on how the practices of successful charter schools can be used in public schools.

The Proposal

Focus on human capital. Teachers should be given the tools they need to succeed, including increased feedback from administrators and professional development at all stages in their career

Use student data to drive instruction. Data can drive more personalized and more efficient learning, allowing both teachers and students to track progress and to make sure that each student is on a path that is appropriate for her.

Provide high-dosage tutoring. Students should be offered intensive, small-group tutoring that is customized to each student's baseline achievement and pace of learning.

Extend time on task. To make time for increased tutoring, among other changes, the amount of time devoted to instruction should be increased. Schools should increase both the length of the school day and the number of days in the school year.

Foster a culture of high expectations. From the time that students enter a school, they should understand that they are expected to succeed and that the teachers, administrators, and other staff are there to help them succeed. This environment can be created with time dedicated to setting goals, with posters encouraging college attendance, and many other steps.

Benefits

Certain charter schools have had great success in boosting student achievement, especially in disadvantaged neighborhoods. However, because charter schools have a mixed record of success and serve only a limited population of students, they are clearly not a panacea. But the astounding results that some charter schools have demonstrated promise that implementing these changes in public schools could have a dramatic and transformative effect for students across the country.



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